university of groningen / faculty of mathematics and natural sciences / Science and Society Group

Towards sustainable biotechnology innovation in Africa

– THE ROLES OF STAKEHOLDERS IN LOCAL CONTEXTS –

AIM

To contribute to sustainable crop-biotechnology innovation in African contexts by operationalizing guiding concepts from Science, Technology and Society (STS) studies.

OBJECTIVES

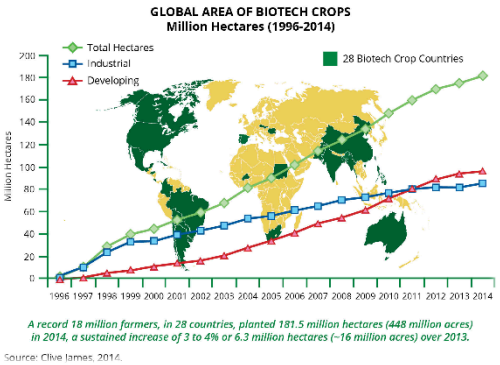
- ✧ To explore the roles of different stakeholders in crop-biotechnology innovation processes in Africa;
- ✧ To explore how local contexts shape crop-biotechnology differently;
- ✧ To explore how crop-biotechnology shapes different contexts differently;
- ✧ To make policy recommendations on stakeholder involvement in decision-making.

SETTING THE SCENE

African agriculture generally performs poorly compared to the rest of the world, and the use of genetic modification to improve crop varieties (GMOs) is often proposed as a possible solution.

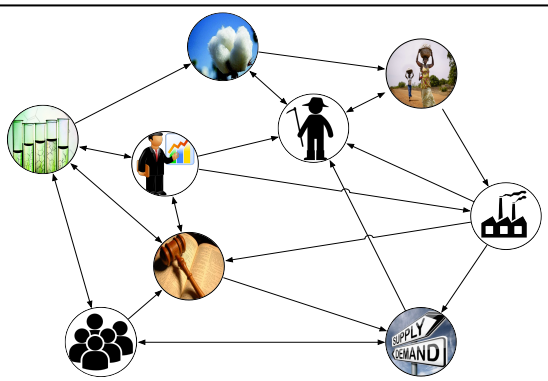
But the technology itself also comes with its problems. For instance there are concerns about the possible risk to human health and the environment, about the influence of multinational companies producing those GMOs, and about the marginalization of local farmers.

This combination of promises and threats provides the requirement for inclusive policy frameworks for biotechnology in Africa.



A record 18 million farmers, in 28 countries, planted 181.5 million hectares (448 million acres) in 2014, a sustained increase of 3 to 4% or 6.3 million hectares (~16 million acres) over 2013.

Source: Clive James, 2014.



THEORETICAL FRAMEWORK

For the purpose of contributing to more inclusive policy frameworks, the STS field offers powerful tools and concepts to explicate societal processes of innovation that otherwise remain black-boxed.

- ✧ Co-evolutionary model of innovation: Societal and technological innovation co-evolve. They are mutually dependent and shape each other.
- ✧ Socio-technical network: The working of technology is determined by the configuration of societal and technical elements.
- ✧ Stakeholder involvement: A configuration of societal and technical elements that works in the local context requires the involvement of stakeholders in decision making processes.

FIRST STEPS

Research on commercialization of crop-biotechnology in Africa, by means of three case studies:

- ✧ Burkina Faso | Bt cotton| January 2016
  - Currently commercialized, possibly discontinued in the coming years
- ✧ South Africa | Bt cotton & Bt maize| May 2016
  - Currently commercialized
- ✧ Kenya | Bt maize| 2017
  - Currently pending approval

Methods include desk research, interviews, surveys, focus groups, and workshops.

Cotton farmers in Burkina Faso. Photo's by O. Girard for Center for International Forestry Research (CIFOR)

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